

PROCEEDINGS OF THE
ROYAL ENTOMOLOGICAL SOCIETY
OF LONDON

SERIES C. JOURNAL OF MEETINGS

VOLUME 22

No. 8, 1957

ORDINARY MEETING.

WEDNESDAY, 4TH DECEMBER, 1957, at 5.30 p.m.

AGENDA.

1. Confirmation of the Proceedings of the Ordinary Meeting held on 6th November, 1957.
2. Recommendations of candidates for Fellowship. First reading.
3. Recommendations of candidates for Fellowship. Second reading.
4. Announcement of election of new Fellows.
5. Additions to the Library (see p. 45).
6. Nomination of Officers and Council for 1958.
7. Admission of Fellows.
8. Exhibits.

As already announced, the meeting will be devoted to small exhibits of special interest requiring only short explanations.

Brief notes on these exhibits, suitable for publication in these *Proceedings*, should reach the Honorary Secretary by Saturday, 30th November.

TEA will be served in the Library before the meeting.

NOTICES.

International Society of Soil Science.

A Colloquium on Research Methods in Soil Zoology will be held at Rothamsted Experimental Station from 10th to 14th July, 1958, immediately preceding the International Zoological Congress.

Further details are given on the Society's notice board, or may be obtained from the Organising Secretary, Dr. P. W. Murphy, Rothamsted Experimental Station, Harpenden, Herts.

Forthcoming Ordinary Meetings.

15th January, 1958.

To be arranged.

5th February, 1958.

Annual Meeting.

PROCEEDINGS OF THE ORDINARY MEETING HELD ON 6TH NOVEMBER, 1957.

Professor O. W. RICHARDS, President, in the Chair.

Present, 42 Fellows and 8 Visitors.

The minutes of the Ordinary Meeting held on 2nd October were confirmed and signed by the President.

The names of the following candidates for election were read for the first time : Mr. Robert Fairclough, D.F.C. ; Mr. Peter Hamilton Giles ; Professor V. J. Isaac Grant, M.A., B.Sc. ; Mr. Peter Harris ; Mr. Timothy Armitage Potts ; and Dr. Bryan John Raymond Taylor.

For the second time (taken as read) : Mr. David Seymour Brown ; Mr. Stephen James Curry, M.A. ; Mr. Robin Edwards ; Dr. Frederick Rudolf Hollins, M.B., B.Ch. ; Mr. Herbert Henry Huxley, M.A. ; Mr. Handel Keate ; Mr. Joseph William Newbold ; Professor Robert Omar Rilett, B.A., M.A., Ph.D. ; Mr. Michael Peter Rushton, B.Sc. ; Mr. Hanuman Prasad Saxena ; Mr. Kiril Sidor ; Mr. Alexander Reginald Tindall, B.Sc. ; Mr. William Nelson Yule, B.Sc. ; and Dr. Mohamed Abdel Aziz Zaher, M.Sc., Ph.D.

The Secretary read the names of the following newly elected Fellows of the Society : Dr. Robert Barrass, Officers' Mess, 3 Training Regiment, Royal Signals, Lincoln ; Mr. William Noel Beesley, Central Veterinary Laboratories, Ministry of Agriculture, Weybridge, Surrey ; Dr. Raymond Foster, Colonial Pesticides Research Unit, P.O. Box 204, Arusha, Tanganyika ; Mr. Brian McCullough Gerard, 68 Fern Lane, Hounslow, Middlesex ; Mr. Peter John Kingsley-Heath, Desert Locust Control, Nairobi, Kenya ; Mr. Joseph Maurice McManus, 12 Bleasdale Road, Wythenshawe, Manchester, 22 ; Dr. Bhup Kishore Tandan, M.Sc., Ph.D., Department of Zoology, University of Lucknow, Lucknow,

India; Professor Vasco M. Tanner, Ph.D., Department of Zoology and Entomology, Brigham Young University, Provo, Utah, U.S.A.; and Mr. Robert Octave Stewart, Samuel Stewart S.A., 2 Quai Ortelius, Antwerp, Belgium.

Thanks were voted to donors of gifts to the Library since the last meeting.

Mr. B. M. Gerard, Mr. I. R. Harrison and Mr. L. P. Lefkovitch signed the Obligation Book and were admitted Fellows of the Society.

The following papers, accepted for publication in the *Transactions*, were read in title:

"Fulgoroidea of South-eastern Polynesia (Hemiptera-Homoptera)", by R. G. Fennah.

"Egg-laying and egg-hatching in *Agabus bipustulatus* L., and notes on oviposition in other species of *Agabus* (Coleoptera: Dytiscidae)", by D. J. Jackson.

"An annotated catalogue of the Culicine mosquitoes of the Federation of Rhodesia and Nyasaland and neighbouring countries (Diptera: Culicidae) together with locality records for Southern Rhodesia", by H. S. Leeson.

"Some Diptera of medical interest in the Sudan Republic", by D. J. Lewis.

"On the taxonomy of the Erotylidae (Coleoptera) with special reference to the morphological characters of the larvae. II.", by the late A. W. Rymer-Roberts. [Communicated by Dr. F. van Emden.]

"Ovulation and corpus luteum formation in *Locusta migratoria migratorioides* (R. and F.) and *Schistocerca gregaria* (Forsk.) (Orthoptera: Acridoidea)", by T. Singh.

"The biology of the Chrysomelid beetle *Phytodecta olivacea* (Forster) (Coleoptera: Chrysomelidae)", by N. Waloff and O. W. Richards.

"The natural history of *Papilio machaon* L. in Baghdad (Lepidoptera: Papilionidae)", by E. P. Wiltshire.

Miss D. J. Jackson exhibited a slide of the wings and metatergum of *Hydroporus ferrugineus* Steph. showing various characters indicating incapacity for flight. The specimen had been obtained, along with others showing similar flight reduction, from a winterbourne in Dorset. In all those dissected the flight muscles were undeveloped, just as she had already observed in a few specimens from Scotland.

The President asked whether Miss Jackson thought all the habitats of this species were connected with underground water. Miss Jackson having replied that she thought this was so, Professor Richards said he wondered about the N. Wales localities. Miss Jackson replied that Mr. J. Balfour-Browne had said that the tiny springs did dry up and the adult beetles followed the receding water underground.

Mr. R. C. Fisher gave a paper entitled "A reinvestigation of Flightlessness in the Coleoptera of Madeira", an abstract of which appeared on pages 35-36.

Mr. Fisher's paper was followed by a contribution by Mr. David S. Smith on the morphological aspects of the problem. Mr. Smith said that, for ecological purposes, it is permissible to consider as "flightless" any individual which shows obvious wing reduction. However, the degree of thoracic modification undergone by such beetles varies greatly between different species, and a series may be constructed which illustrates the progressively more profound modification exhibited by such brachypterous species. In addition, collections of beetles made in Maderia have provided material for a parallel study of the reduction of

flight musculature, not only in many fully winged species, but also in such a series of increasing thoracic abnormality.

In the discussion which followed Miss Jackson said she was particularly interested in Mr. Smith's contribution on the morphological aspects of flightlessness and asked if he found that in the early stages of flight reduction the muscles failed in development at the same time as their skeletal supports (such as the pleural discs) or if the muscles showed atrophy before the skeletal parts were modified.

Mr. Smith replied that the first stage was the loss of the normal muscles, while the pleural discs remained quite normal. Such individuals are presumed to have possessed normal flight muscles at some point in their adult life.

The President remarked that there was a record of a Scolytid beetle in Canada in which the muscles were reduced in size as the ovaries developed, and became functional again after egg-laying.

Miss Jackson having enquired how the Madeiran fauna originated, Mr. Fisher replied that it was largely European, and Cockerell held the view that it probably reached the island on floating debris, the flightless specimens being less likely to escape.

Dr. J. L. Cloudsley-Thompson asked whether there was any evidence that there was a greater percentage of flightlessness than in a comparable area on the mainland, to which Mr. Fisher replied that he had not been able to make corresponding collections on the Continent, nor had he been able to obtain such information from the literature.

The President said that the flightlessness was not so much more evident in Coleoptera as was possibly implied by Mr. Fisher and Mr. Smith. Bezzi, in 1912, discussed this condition in Diptera and there was also a fair amount of flightlessness in Hemiptera.

Mr. Smith said the distinction he was trying to make was that in Coleoptera the structure of the abnormal flight muscle was characteristic of the Order, and differed from corresponding tissue in other brachypterous forms. For example, among Diptera and Orthoptera, the extent, rather than the structure, is altered, in the tracheal organs of some aquatic Hemiptera in which muscle fibres become less frequent through larval and adult life.

Dr. P. T. Haskell said that failing powers of flight would be expected first to have a physiological manifestation.

Mr. Smith said that this might be so; however, cytological studies had shown that even highly reduced muscle contained some fibres and sarcosomes.

The President suggested that some caution was necessary in the use of the terms "orthogenesis" and "size of population" in their application to the rate of evolution. According to many authorities, what Mr. Fisher had called "orthogenesis" would be termed recurrent mutation. With regard to size of population, he understood that the population had to be very small before its size became a factor in evolution.

Mr. D. Leston having enquired the age of Madeira, compared with Hawaii and other volcanic islands, Mr. Fisher said his recollection was that Darlington had considered Madeira and the Antilles as of contemporary origin.

E. B. BRITTON, *Honorary Secretary.*

The next meeting will be held on 15th January, 1958, at 5.30 p.m.

ADDITIONS TO THE LIBRARY.

Presented.

- Antoine, M. Coléoptères Carabiques du Maroc. II. [*Mém. Soc. Sci. nat., Maroc.* (N.S.) 3 : 179-314.] 1957. [The Publishers.]
- Kirkpatrick, T. W. *Insect life in the Tropics*. 8vo. London : Longmans, 1957. [The Publishers.]
- McKenzie, H. *The armored scale insects of California*. 8vo. London : Camb. Univ. Pr., 1957. [Bull. Calif. Ins. Surv. 5.] [The Publishers.]
- Matthews, P. *The pursuit of moths and butterflies: an anthology*. 8vo. London : Chatto & Windus, 1957. [The Author.]

Purchased.

- Catalogus Faunae Austriae*. ed. H. Strouhal. XIIIa. *Saltatoria, Dermaptera, Blattodea, Mantodea*, von R. Ebner. 8vo. Wien : Springer, 1953.
- Great Britain. Ministry of Agriculture. *Toxic chemicals in agriculture. Report of the Working Party*. [S. Zuckerman.] [Pamphl.] 1951.
- Hansen, V. *Biller*. XVII. *Rovbiller*. III. 8vo. København : Gads Forlag, 1954. [Danmarks Fauna 59.]
- Harz, K., & Wittstadt, H. *Wanderfalter*. 8vo. Wittenberg Lutherstadt : A. Ziemsen, 1957. [Die Neue Brehm-Bücherei 191.]
- Insects of Micronesia*. 8vo. Honolulu : Bishop Museum, 1954—
- Vol. 6 no. 3. *Homoptera: Fulgoroidea*. By R. G. Fennah. 1956.
- Vol. 6 no. 4. *Homoptera: Cercopidae*. Par H. Synave. 1957.
- Vol. 12 no. 1. *Diptera: Culicidae*. By R. M. Bohart. 1956.
- Vol. 12 no. 2. *Diptera: Bibionidae & Scatopsidae*. By D. Elmo Hardy. 1956.
- Vol. 14 no. 2. *Diptera: Coelopidae*. By D. Elmo Hardy. 1956.
- Vol. 16 no. 1. *Coleoptera: Elateridae*. By R. H. Van Zwaluwenberg. 1957.
- Vol. 17 no. 3. *Coleoptera: Tenebrionidae*. Von H. Kulzer. 1957.
- Krausse, A. *Ameisenkunde*. 8vo. Stuttgart : Alfred Kernen, 1929.
- Okada, T. *Systematic study of Drosophilidae of Japan*. 8vo. Tokyo : Gihodo Co., 1956.
- Proceedings of the Sixth Technical Meeting of the International Union for the Conservation of Nature, Edinburgh, June 1956*. 8vo. London : Nature Conservancy, 1957.
- Redtenbacher, L. *Fauna Austriaca. Die Käfer*. 2te Aufl. 2 Bd. 8vo. Wien : Carl Gerold's Sohn, 1872-74.
- Risbec, J. Les Chalcidoïdes d'A.O.F. II. Les Microgasterinae d'A.O.F. [*Mem. Inst. franç. Afr. noire, Dakar* 13 : 7-409, 413-473]. 1951.
- Verity, R. *Les variations géographiques et saisonnières des papillons diurnes en France* III. 1951. [*Rev. franç. Lépid. Suppl.*]

In addition, separates have been presented by United States Department of Agriculture ; Mr. V. Venkat Rao ; Anti-Locust Research Centre ; Smithsonian Institution ; West African Inter-territorial Secretariat ; American Entomological

Society ; Dr. G. O. Stride ; Nature Conservancy ; Capt. D. B. Baker ; E.A.T.R.O., Shinyanga ; Dr. P. S. Corbet ; Zoologischen Staatssammlung, München ; Director, East African Virus Research Institute, Entebbe ; Mr. Francis Hemming, C.M.G., C.B.E. ; Mr. R. S. George ; Professor C. M. Biezanko ; Miss C. Longfield ; British Museum (Natural History) ; Dr. A. Neboiss ; Imperial College of Science & Technology ; Commonwealth Institute of Entomology ; Mr. N. C. E. Miller ; Mr. E. B. Basden ; and Department of Entomology, University of Queensland.